N.E.B. COPY

PRECISION
Wireline Technologies

Precision Drilling

BOREHOLE COMPENSATED
SONIC
GAMMA RAY LOG

PROVINCE NORTHWEST TERRITORIES
FIELD ARROWHEAD RIVER
WELL ANADARKO ARROWHEAD RIVER K-35
COMPANY ANADARKO CANADA ENERGY

COMPANY ANADARKO CANADA ENERGY
WELL ANADARKO ARROWHEAD RIVER K-35
FIELD ARROWHEAD RIVER
PROVINCE NORTHWEST TERRITORIES

LSD ____ Sec. ____ Twp. ____ Rge. ____
Perm. Datum GROUND LEVEL Elev. 541.17 m
Log measured from KB , 6.33 m above Permanent Datum.

Other Services:
STI SPD

ELEV.K.B. 547.50 m
G.L. 541.17 m
CBF ========-

UWI 300K356040122450
Licence 9211-A069

Date	17-FEB-2004		
Run No.	ONE		
Bot. Driller	2442.7 m		
Bot. Logger	2443.0 m		
First Reading	2430.8 m		
Last Reading	652.0 m		
Meters Meas.	1778.8 m		
Csg. Driller	653.0 m	244.5mm @ 59.5kg/m	
Csg. Logger	652.0 m		
Bit Size	215.9 mm		
Fluid Type	INVERT		
Dens. | Visc.	955 | 85		
pH | Fluid Loss	N/A | N/A		
Sample Source	FLOWLINE		
Rm	N/A @ N/A °C	@ °C	@ °C
Rmf	N/A @ N/A °C	@ °C	@ °C
Rmc	N/A @ N/A °C	@ °C	@ °C
Rm @ BHT	N/A @ N/A °C	@ °C	@ °C
Max Rec.Temp	92 °C		
Spacing	0.61 M		
Operating Time	6.0 HRS		
Unit #	379		
Location	GRANDE PRAIRIE OH		
Recorded By	M. KOSCIUCZYK		
Witnessed By	H. COWAN		

REMARKS Rig: AKITA 37 Service Order # 30015974

Drilling Stopped 05:45/17 Circulation Stopped 11:30/17 Tool on Bottom 22:35/17 BHT 92 ℃

- STI-HBC-SPED-CNT-UGR-DAC LOGGED IN COMBINATION
- PRESENTATIONS AND INTERVALS AS PER CUSTOMERS REQUEST.

Prints: 2

CHANGES IN MUD TYPE OR NEW SAMPLE		
Date | Sample No.		
Depth - Driller		
Type Fluid in Hole		
Dens. | Visc.		
pH | Water Loss		
Source of Sample		
Rm @ Meas. Temp.	@	℃
Rmf @ Meas. Temp.	@	℃
Rmc @ Meas. Temp.	@	℃
Source Rmf | Rmc		
Rm @ BHT	@	℃
Rmf @ BHT	@	℃
Rmc @ BHT	@	℃

SCALE CHANGES

Type Log	Interval	Scale

EQUIPMENT DATA

Run No.	Tool Type	Tool No.	Other
ONE			
	HBC-AA	161	CENTRALIZED
	UGR-JB	187	RA-20S-734
	CAL-FA	123	

REMARKS

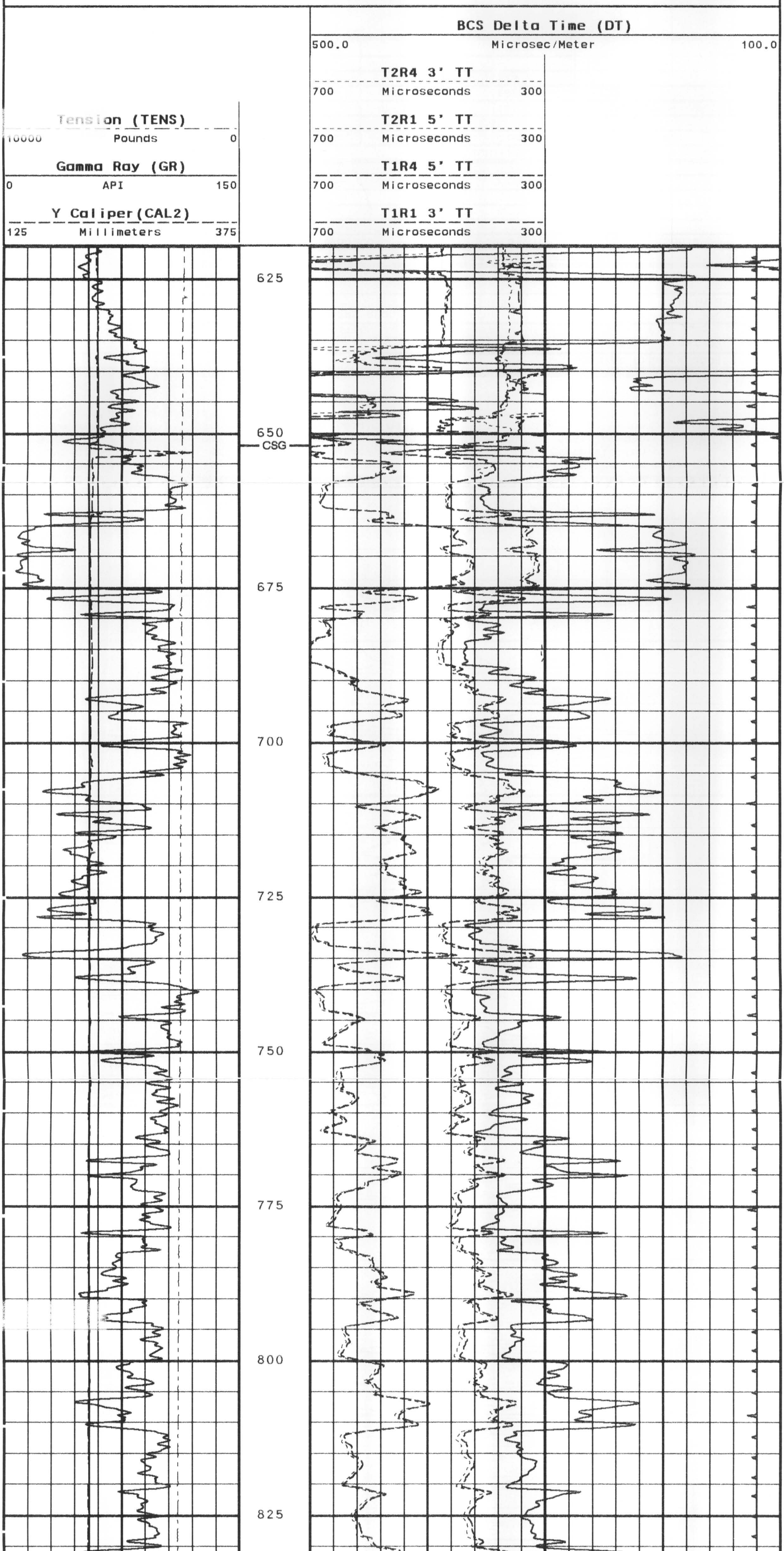
MAIN PASS
1:600 SCALE

DEPTH SCALE: **1:600** VERSION: **2004.02.11.263**

MAIN PASS

30015974 STIMP

FINISH DEPTH: **0.0** Meters DIRECTION: **UP** DATE: TIME: MODE: **TRACE PLAYBACK**

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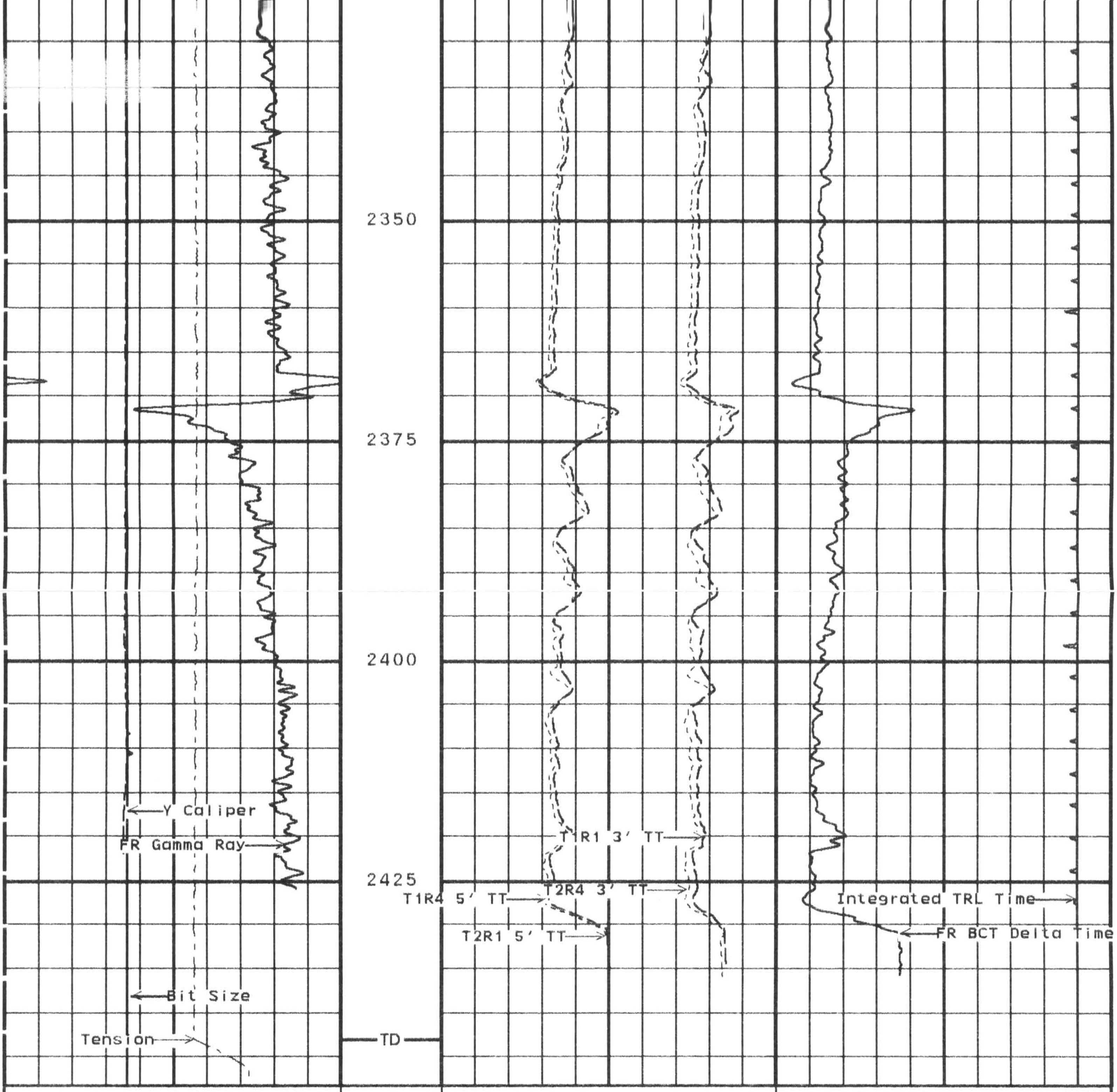


Y Caliper(CAL2)
125 Millimeters 375

Gamma Ray (GR)
0 API 150

Tension (TENS)
10000 Pounds 0

T1R1 3' TT
700 Microseconds 300

T1R4 5' TT
700 Microseconds 300

T2R1 5' TT
700 Microseconds 300

T2R4 3' TT
700 Microseconds 300

BCS Delta Time (DT)
500.0 Microsec/Meter 100.0

START DEPTH: **2448.2** DIRECTION: **UP** DATE: **02/18/2004** TIME:**01:02** MODE: **TRACE PLAYBACK**

30015974 STIMP

MAIN PASS

DEPTH SCALE: **1:600** VERSION: **2004.02.11.263**

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	2443.00	Meters
CSIZ	Casing Size	244.5	Millimeters
CWEI	Casing Weight	59.52	Kilograms/Meter
BS	Bit Size	215.9	Millimeters
BHT	Bottom Hole Temp	92.0	DegreesCentigrade
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade
SPDD	SP Drift Corr. mV	0	Millivolts
SPBR	SP Bridle Depth Offset	0.00	Meters
SPTL	Log With SP From	STI	
STIB	STI SFL Chassis Return	ON	
STI4	STI 4 Level Average	OFF	
STIS	STI SFL Log Mode On	ON	
DTF	DT Fluid	620.5	Microsec/Meter
SACC	Accumulation Time	100	Seconds
BARI	Barite Correction	OFF	
MW	Mud Weight	955.0	Kilograms/Cu.Meter
MDEN	Matrix Density	2710	Kilograms/Cu.Meter
FD	Fluid Density	1000	Kilograms/Cu.Meter
SPVS	SPeD Valve Status	IN	
NGAI	K Factor-NEU	1.003	
BHS	Open/Cased Hole	Open	
BSAL	Borehole Salinity	0	Parts/Million
FSAL	Formation Salinity	0	Parts/Million
NBCS	Bitsize/Calp Sel-CNT	Caliper	
NTLS	Tool Type-CNT	CNT-S	
TGRD	Temperature Gradient	0.555	DegC/100Meters
NTMS	Temp Source-CNT	Gradient	
NCOT	Constant Temp-CNT	21.0	DegreesCentigrade
NCOR	Cnt Ch Corr Offset	OFF	
OCOR	Cnt Environ.correction	OFF	
SWAN	Sheave Wheel Angle	0.00	Degrees
NCAL	LIS Caliper Name-CNT	X Caliper	
SCAL	Density BH Diam Source	X Caliper	

REMARKS

MAIN PASS
1:240 SCALE

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

MAIN PASS

30015974 STIMP

FINISH DEPTH: **0.0** Meters DIRECTION: **UP** DATE: TIME: MODE: **TRACE PLAYBACK**

BCS Delta Time (DT)
300.0 Microsec/Meter 100.0

T2R4 3' TT
700 Microseconds 300

T2R1 5' TT
700 Microseconds 300

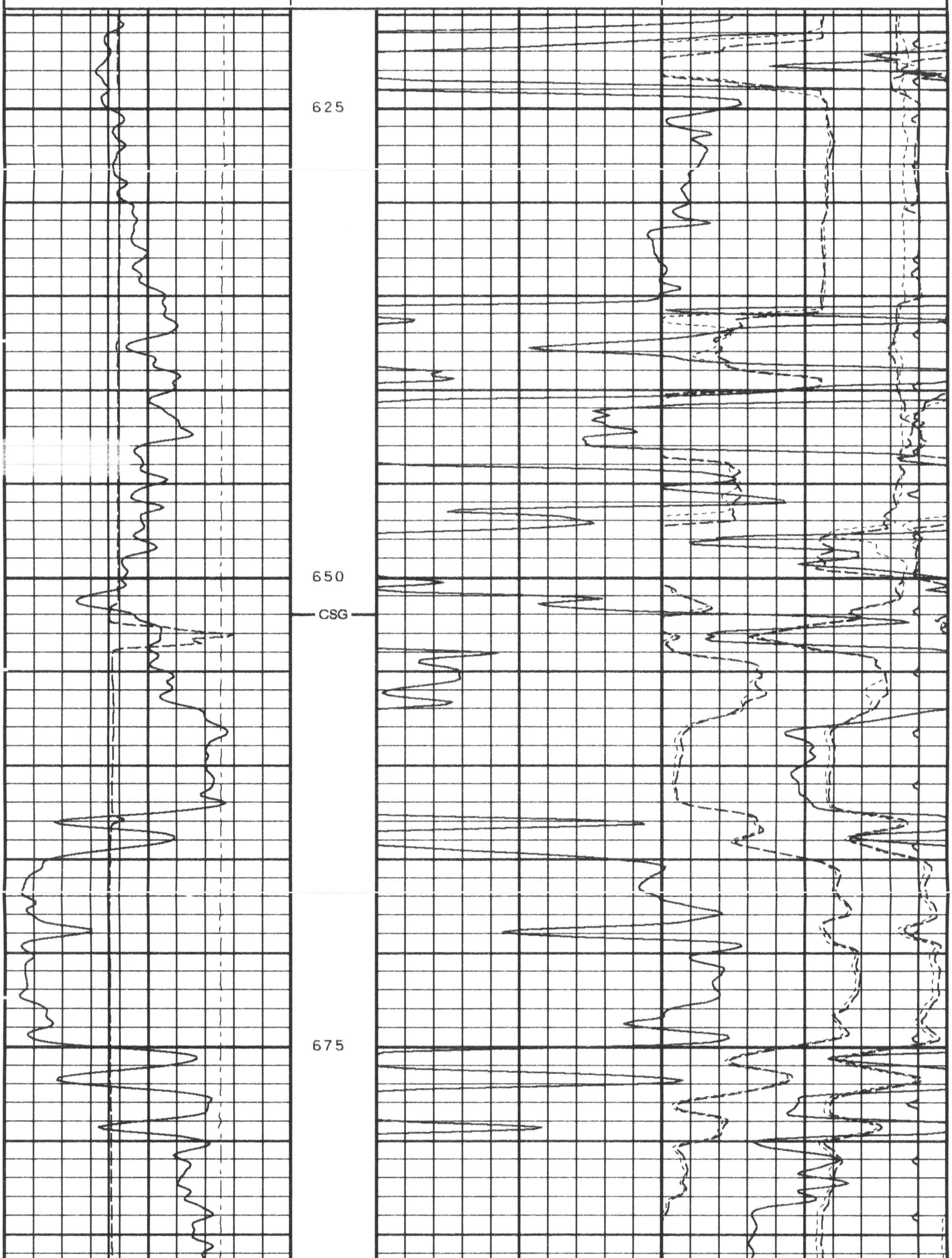
T1R4 5' TT
700 Microseconds 300

T1R1 3' TT
700 Microseconds 300

Tension (TENS)
10000 Pounds 0

Gamma Ray (GR)
0 API 150

Y Caliper(CAL2)
125 Millimeters 375

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	Y Caliper(CAL2)	
125	Millimeters	375
	Gamma Ray (GR)	
0	API	150
	Tension (TENS)	
10000	Pounds	0

	T1R1 3' TT	
700	Microseconds	300
	T1R4 5' TT	
700	Microseconds	300
	T2R1 5' TT	
700	Microseconds	300
	T2R4 3' TT	
700	Microseconds	300

	BCS Delta Time (DT)	
300.0	Microsec/Meter	100.0

START DEPTH: **2448.2** DIRECTION: **UP** DATE: **02/18/2004** TIME:**01:02** MODE: **TRACE PLAYBACK**

30015974 STIMP

MAIN PASS

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	2443.00	Meters
CSIZ	Casing Size	244.5	Millimeters
CWEI	Casing Weight	59.52	Kilograms/Meter
BS	Bit Size	215.9	Millimeters

BHT	Bottom Hole Temp	92.0	DegreesCentigrade
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade
SPDD	SP Drift Corr. mV	0	Millivolts
SPBR	SP Bridle Depth Offset	0.00	Meters
SPTL	Log With SP From	STI	
STIB	STI SFL Chassis Return	ON	
STI4	STI 4 Level Average	OFF	
STIS	STI SFL Log Mode On	ON	
DTF	DT Fluid	620.5	Microsec/Meter
SACC	Accumulation Time	100	Seconds
BARI	Barite Correction	OFF	
MW	Mud Weight	955.0	Kilograms/Cu.Meter
MDEN	Matrix Density	2710	Kilograms/Cu.Meter
FD	Fluid Density	1000	Kilograms/Cu.Meter
SPVS	SPeD Valve Status	IN	
NGAI	K Factor-NEU	1.003	
BHS	Open/Cased Hole	Open	
BSAL	Borehole Salinity	0	Parts/Million
FSAL	Formation Salinity	0	Parts/Million
NBCS	Bitsize/Calp Sel-CNT	Caliper	
NTLS	Tool Type-CNT	CNT-S	
TGRD	Temperature Gradient	0.555	DegC/100Meters
NTMS	Temp Source-CNT	Gradient	
NCOT	Constant Temp-CNT	21.0	DegreesCentigrade
NCOR	Cnt Ch Corr Offset	OFF	
OCOR	Cnt Environ.correction	OFF	
SWAN	Sheave Wheel Angle	0.00	Degrees
NCAL	LIS Caliper Name-CNT	X Caliper	
SCAL	Density BH Diam Source	X Caliper	

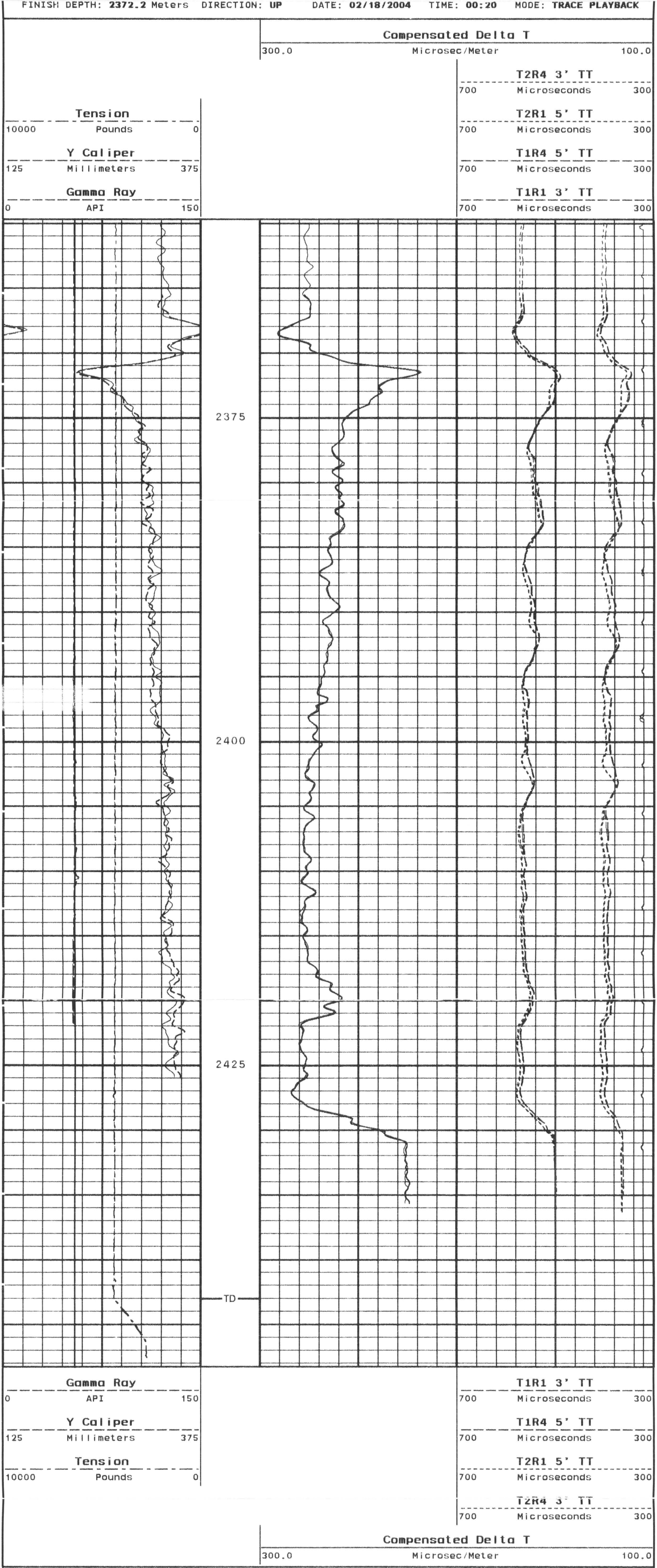
REMARKS

REPEAT PASS
1:240 SCALE
MAIN PASS = LIGHT CURVES
REPEAT PASS = HEAVY CURVES

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

30015974

FINISH DEPTH: **2372.2** Meters DIRECTION: **UP** DATE: **02/18/2004** TIME: **00:20** MODE: **TRACE PLAYBACK**



START DEPTH: **2448.2** DIRECTION: **UP** DATE: **02/18/2004** TIME: **00:20** MODE: **TRACE PLAYBACK**

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	2443.00	Meters
CSIZ	Casing Size	244.5	Millimeters
CWEI	Casing Weight	59.52	Kilograms/Meter
BS	Bit Size	215.9	Millimeters
BHT	Bottom Hole Temp	92.0	DegreesCentigrade
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade
SPDD	SP Drift Corr. mV	0	Millivolts
SPBR	SP Bridle Depth Offset	0.00	Meters
SPTL	Log With SP From	STI	
STIB	STI SFL Chassis Return	ON	
STI4	STI 4 Level Average	OFF	
STIS	STI SFL Log Mode On	ON	
DTF	DT Fluid	620.5	Microsec/Meter
SACC	Accumulation Time	100	Seconds
BARI	Barite Correction	OFF	
MW	Mud Weight	955.0	Kilograms/Cu.Meter
MDEN	Matrix Density	2710	Kilograms/Cu.Meter
FD	Fluid Density	1000	Kilograms/Cu.Meter
SPVS	SPeD Valve Status	OUT	
NGAI	K Factor-NEU	1.003	
BHS	Open/Cased Hole	Open	
BSAL	Borehole Salinity	0	Parts/Million
FSAL	Formation Salinity	0	Parts/Million
NBCS	Bitsize/Calp Sel-CNT	Caliper	
NTLS	Tool Type-CNT	CNT-S	
TGRD	Temperature Gradient	0.555	DegC/100Meters
NTMS	Temp Source-CNT	Gradient	
NCOT	Constant Temp-CNT	21.0	DegreesCentigrade
NCOR	Cnt Ch Corr Offset	OFF	
OCOR	Cnt Environ.correction	OFF	
SWAN	Sheave Wheel Angle	0.00	Degrees
NCAL	LIS Caliper Name-CNT	X Caliper	
SCAL	Density BH Diam Source	X Caliper	

REMARKS

CASING CHECK

1:240 SCALE

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

CASINGCHECK

30015974 CASINGCHECKB

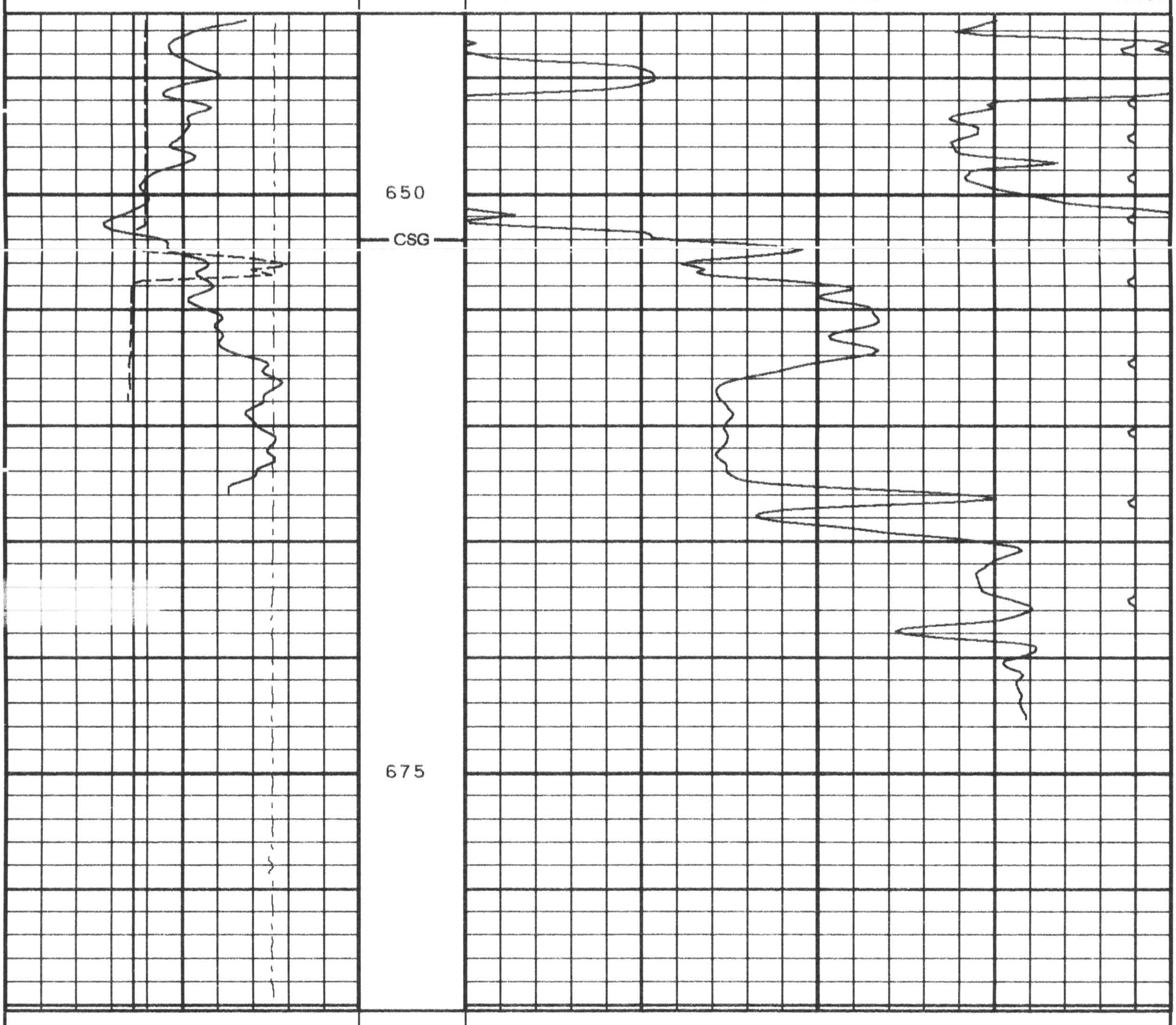
FINISH DEPTH: **0.0** Meters DIRECTION: **UP** DATE: TIME: MODE: **TRACE PLAYBACK**

Tension (TENS)
10000 Pounds 0

Y Caliper(CAL2)
125 Millimeters 375

Gamma Ray (GR)
0 API 150

BCS Delta Time (DT)
500.0 Microsec/Meter 100.0



Gamma Ray (GR)
0 API 150

BCS Delta Time (DT)
500.0 Microsec/Meter 100.0

Y Caliper(CAL2)
125 Millimeters 375

Tension (TENS)
10000 Pounds 0

START DEPTH: **685.2** DIRECTION: **UP** DATE: **02/17/2004** TIME: **22:07** MODE: **TRACE PLAYBACK**

30015974 CASINGCHECKB

CASINGCHECK

DEPTH SCALE: **1:240** VERSION: **2004.02.11.263**

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	2443.00	Meters
CSIZ	Casing Size	244.5	Millimeters
CWEI	Casing Weight	59.52	Kilograms/Meter
BS	Bit Size	215.9	Millimeters
BHT	Bottom Hole Temp	92.0	DegreesCentigrade
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade
SPDD	SP Drift Corr. mV	0	Millivolts
SPBR	SP Bridle Depth Offset	0.00	Meters
SPTL	Log With SP From	STI	
STIB	STI SFL Chassis Return	ON	
STI4	STI 4 Level Average	OFF	
STIS	STI SFL Log Mode On	ON	
DTF	DT Fluid	620.5	Microsec/Meter
SACC	Accumulation Time	100	Seconds
BARI	Barite Correction	OFF	
MW	Mud Weight	955.0	Kilograms/Cu.Meter
MDEN	Matrix Density	2710	Kilograms/Cu.Meter
FD	Fluid Density	1000	Kilograms/Cu.Meter
SPVS	SPeD Valve Status	IN	
NGAI	K Factor-NEU	1.003	
BHS	Open/Cased Hole	Open	
BSAL	Borehole Salinity	0	Parts/Million
FSAL	Formation Salinity	0	Parts/Million
NBCS	Bitsize/Calp Sel-CNT	Caliper	
NTLS	Tool Type-CNT	CNT-S	
TGRD	Temperature Gradient	0.555	DegC/100Meters
NTMS	Temp Source-CNT	Gradient	
NCOT	Constant Temp-CNT	21.0	DegreesCentigrade
NCOR	Cnt Ch Corr Offset	OFF	
OCOR	Cnt Environ.correction	OFF	
SWAN	Sheave Wheel Angle	0.00	Degrees
NCAL	LIS Caliper Name-CNT	X Caliper	
SCAL	Density BH Diam Source	X Caliper	

02/16/04 **23:57** **0.0 M** **Ver 40211263** **Job 30015974**

Caliper Before Survey Calibration

Tool Type: CAL-FA **Serial No:calf123**

	Measured			Calibrated		
	Small	Large	Units	Small	Large	Units
MCLO	822.3	1459.3	mv	177.8	355.6	mm

02/16/04 **23:43** **0.0 M** **Ver 40211263** **Job 30015974**

Gamma Ray Before Survey Calibration

Tool Type: UGR-JA **Serial No: ugrj187**
Calibrator No: RA-20S-734

Background	Calibrator	Standard	Units
109.4	612.7	140.0	API

Delta Counts Per Sec: 503.3 **CPS/API = 3.595**

TVD CALCULATION SUMMARY

CALCULATION METHOD : Minimum Curvature **VERSION** : 1.0
TVD DATA FILE : /u/os9-port/cs400/8000/30015974/SURVEY.tvdb

COMPANY : ANADARKO CANADA ENERGY
WELL : ANADARKO ARROWHEAD RIVER K-35
LOCATION : 300K356040122450
DATE : FEBRUARY 17, 2004

DRILLED DEPTH : 2395.57 m
TRUE VERTICAL DEPTH : 2393.71 m
BOTTOM HOLE DISPLACEMENT : N 3.22 m E 1.38 m
TARGET DISPLACEMENT : N 0.00 m E 0.00 m

STATION NUMBER	MEASURED DEPTH (M)	INCLINATION ANGLE (DD)	AZIMUTH (DD)	VERTICAL DEPTH (M)	NORTH +ve (M)	EAST +ve (M)
TIE	0.00	0.00	0.00	0.00	0.00	0.00
1	661.33	0.90	150.00	661.30	-4.50	2.60
2	690.31	0.90	143.40	690.28	-4.88	2.85
3	719.26	0.50	89.20	719.23	-5.06	3.11
4	748.23	0.70	89.20	748.20	-5.05	3.41
5	777.15	0.80	60.00	777.11	-4.95	3.76
6	806.06	0.90	38.20	806.02	-4.67	4.08
7	834.97	1.20	42.00	834.93	-4.27	4.42
8	863.90	1.30	33.40	863.85	-3.77	4.80
9	892.83	1.30	33.20	892.77	-3.22	5.17
10	921.75	1.40	29.90	921.68	-2.64	5.52
11	950.68	1.80	26.20	950.60	-1.93	5.90
12	979.72	1.90	21.30	979.63	-1.07	6.27
13	1008.69	1.60	19.00	1008.58	-0.24	6.58
14	1037.63	2.00	17.90	1037.51	0.62	6.87
15	1066.57	2.00	31.10	1066.43	1.54	7.28
16	1095.48	2.10	19.90	1095.32	2.47	7.72
17	1124.43	2.00	27.60	1124.25	3.41	8.14
18	1153.33	2.10	17.20	1153.14	4.37	8.53
19	1182.23	1.70	18.30	1182.02	5.28	8.82
20	1211.19	1.70	14.80	1210.97	6.10	9.06
21	1240.09	1.90	19.40	1239.85	6.97	9.33
22	1269.00	2.00	14.00	1268.75	7.91	9.61
23	1297.94	2.20	5.30	1297.67	8.95	9.79
24	1326.91	1.90	358.60	1326.62	9.99	9.83
25	1355.82	1.90	3.40	1355.51	10.94	9.84
26	1384.75	1.90	2.10	1384.43	11.90	9.89
27	1413.94	2.00	3.50	1413.60	12.89	9.94
28	1443.16	1.80	353.00	1442.80	13.86	9.91
29	1472.23	1.70	359.10	1471.86	14.74	9.85
30	1501.50	1.60	358.50	1501.12	15.59	9.83
31	1530.61	2.20	4.00	1530.21	16.55	9.86
32	1559.71	2.20	2.20	1559.29	17.67	9.92
33	1588.84	2.00	1.10	1588.40	18.73	9.95
34	1618.05	2.20	8.20	1617.59	19.80	10.04
35	1647.20	2.10	1.60	1646.72	20.88	10.14
36	1676.32	2.10	358.60	1675.82	21.95	10.14
37	1705.50	2.10	359.90	1704.98	23.02	10.13
38	1734.56	2.00	356.20	1734.02	24.06	10.09
39	1763.59	2.00	357.10	1763.04	25.07	10.03
40	1792.73	1.90	352.90	1792.16	26.06	9.95

41	1821.88	1.80	348.90	1821.29	26.99	9.80
42	1850.91	1.80	0.20	1850.31	27.89	9.71
43	1879.86	1.90	354.70	1879.24	28.82	9.67
44	1909.00	1.70	350.40	1908.37	29.73	9.55
45	1938.96	1.40	359.40	1938.32	30.53	9.48
46	1968.05	0.70	5.90	1967.40	31.07	9.49
47	1997.22	0.50	329.10	1996.57	31.35	9.44
48	2026.32	2.00	187.80	2025.67	30.96	9.31
49	2055.40	3.10	191.80	2054.72	29.68	9.08
50	2084.47	5.40	195.20	2083.71	27.60	8.56
51	2113.55	4.50	194.60	2112.68	25.17	7.91
52	2142.65	5.50	190.10	2141.67	22.69	7.38
53	2171.85	5.70	198.60	2170.73	19.94	6.67
54	2200.96	5.40	200.70	2199.70	17.29	5.73
55	2230.08	4.90	201.40	2228.70	14.85	4.79
56	2259.33	5.00	197.70	2257.84	12.47	3.95
57	2288.59	5.30	200.80	2286.99	9.99	3.08
58	2317.87	4.60	205.30	2316.16	7.67	2.10
59	2347.04	4.10	183.30	2345.24	5.57	1.54
60	2376.23	2.70	180.60	2374.38	3.84	1.47
61	2395.57	1.10	206.20	2393.71	3.22	1.38

O.H. Adaptor Head

Weight	18.0 kg
Length	0.74 m
Max. Diameter	8.9 cm

Total Stack Weight	759.0 kg	in air
Total Stack Length	30.87 m	

Crossover

Weight	6.8 kg
Length	0.27 m

Wireline Communications Cartridge

Weight	53.6 kg
Length	2.31 m
Max. Diameter	8.6 cm

2-Arm Caliper

Weight	79.4 kg
Length	2.40 m
Max. Diameter	10.2 cm

SPeD 400 Electronics

Weight	56.7 kg
Length	2.92 m
Max. Diameter	8.6 cm

Universal GR

Weight	37.3 kg
Length	1.40 m
Max. Diameter	8.6 cm

Mandrel Neutron

Weight	45.4 kg
Length	2.07 m
Max. Diameter	8.6 cm

Offset Joint

Weight	3.0 kg
Length	0.36 m
Max. Diameter	8.6 cm

SPeD 400 Pad Section

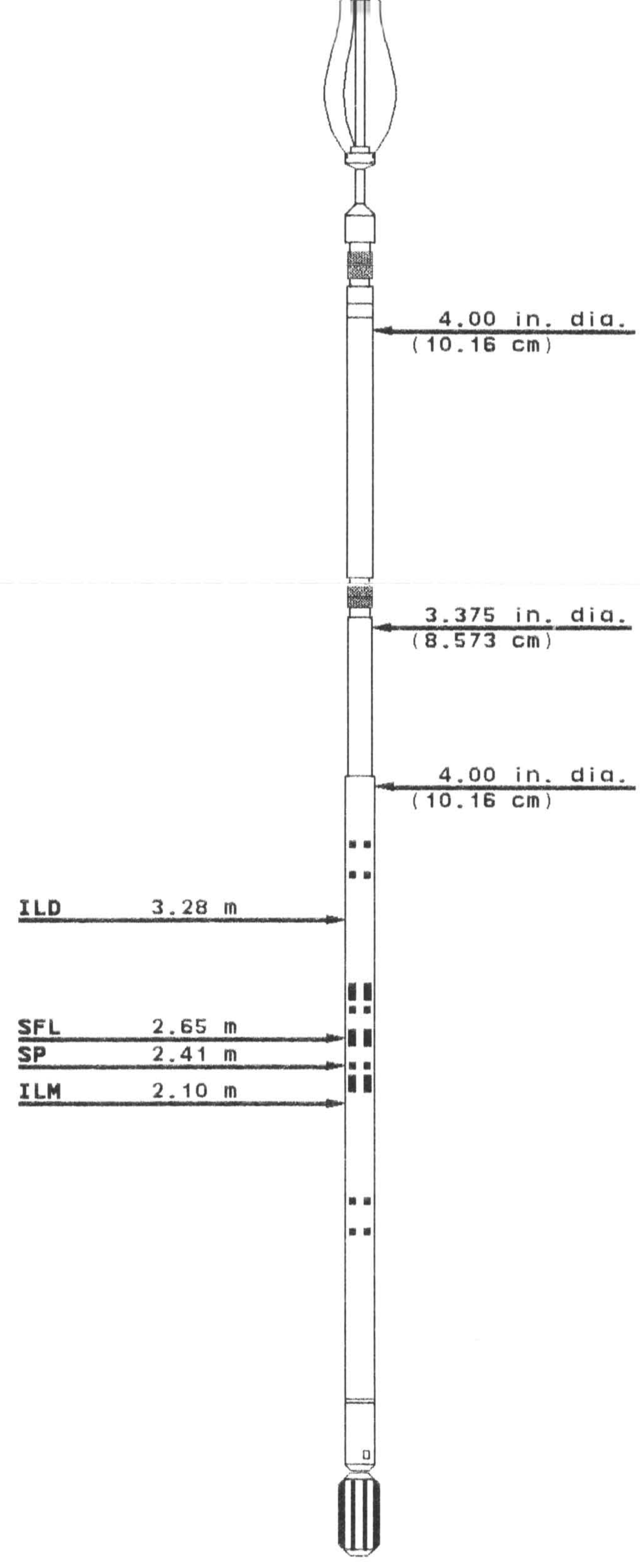
Weight	141.5 kg
Length	3.38 m
Max. Diameter	11.4 cm

Borehole Compensated Sonic

Weight	104.0 kg
Length	4.67 m
Max. Diameter	8.6 cm

Centralizer

Weight	30.9 kg
Length	1.39 m
Max. Diameter	8.9 cm



Simultaneous Triple Induction

Weight	176.9 kg
Length	8.75 m
Max. Diameter	10.2 cm

Stand - Off

Weight	5.5 kg
Length	0.20 m

COMPANY ANADARKO CANADA ENERGY

WELL ANADARKO ARROWHEAD RIVER K-35

FIELD ARROWHEAD RIVER PROVINCE N.W.T.

PRECISION
Wireline Technologies